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ABB STOTZ-KONTAKT GmbH

ABB i-bus[®] KNX

Blind/Roller Shutter Actuator JRA/S



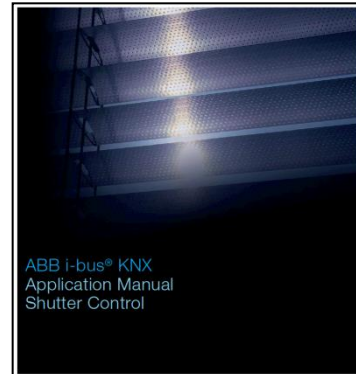
Blind/Roller Shutter Actuator JRA/S

New Generation

- The Blind/Roller Shutter Actuators JRA/S facilitate complex demands on modern sun protection and ventilation control systems, without sacrificing comfort, cost-effectiveness and safety



Blind/Roller Shutter Actuator JRA/S Documentation



- Product Manual
- Product Information
- Application Manual
“Shutter Control”
- Technical datasheet

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Blind/Roller Shutter Actuator JRA/S

Product range overview

„Premium“	„Standard“	„Basic“
JRA/S X.230.5.1	JRA/S X.230.2.1	JRA/S X.230.1.1
2-fold	2-fold	2-fold
4-fold	4-fold	4-fold
8-fold	8-fold	8-fold
JRA/S X.24.5.1		
4-fold		

The right device for every application.

Universal range for many sun protection technology applications.

2, 4, 8-fold Blind/Roller Shutter Actuators (230 V AC) with and without manual operation.

Device for 24 V DC now also with manual operation and automatic travel detection.

Blind/Roller Shutter Actuator JRA/S

Device Overview „Premium“ JRA/S X.230.5.1, 4.24.5.1

JRA/S 2-, 4-, 8-fold 230 V and 4-fold 24 V DC

- With Travel Detection
- With Manual Operation and status LEDs
- The devices do not require an auxiliary voltage (only KNX)
- Universal head screw terminals



2-fold



4-fold



8-fold



4-fold, 24 V DC

Blind/Roller Shutter Actuator JRA/S

Device Overview „Standard“ JRA/S X.230.2.1

JRA/S 2-, 4-, 8-fold 230 V

- With Manual Operation and status LEDs
- Same application programm like „Premium“-devices but without the functions of „Travel Detection“
- The devices do not require an auxiliary voltage (only KNX)
- Universal head screw terminals



2-fold



4-fold



8-fold

Blind/Roller Shutter Actuator JRA/S

Device Overview „Basic“ JRA/S X.230.1.1

JRA/S 2-, 4-, 8-fold 230 V

- Without manual Operation and status LEDs
- Same application programm like „Premium“-devices but without the functions of „Travel Detection“
- The devices do not require an auxiliary voltage (only KNX)
- Universal head screw terminals



2-fold



4-fold



8-fold

Blind/Roller Shutter Actuator JRA/S

Type designation

JRA/S	w	x	y	z
Number of outputs	4			
Nominal voltage		230		
Hardware - properties			5	
Version				1

w: Number of outputs (2, 4, or 8)

x: Rated voltage (24 V or 230 V)

y: Hardware properties

1 = standard

2 = with manual operation

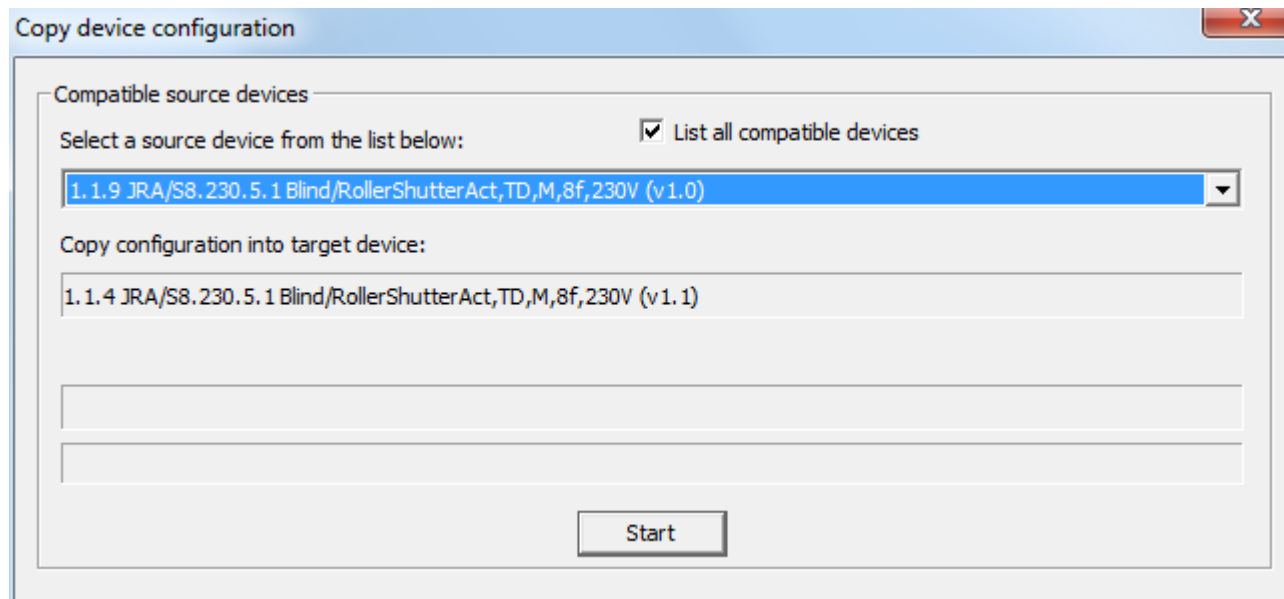
5 = with automatic travel detection and manual operation

z: Hardware version

Blind/Roller Shutter Actuator JRA/S

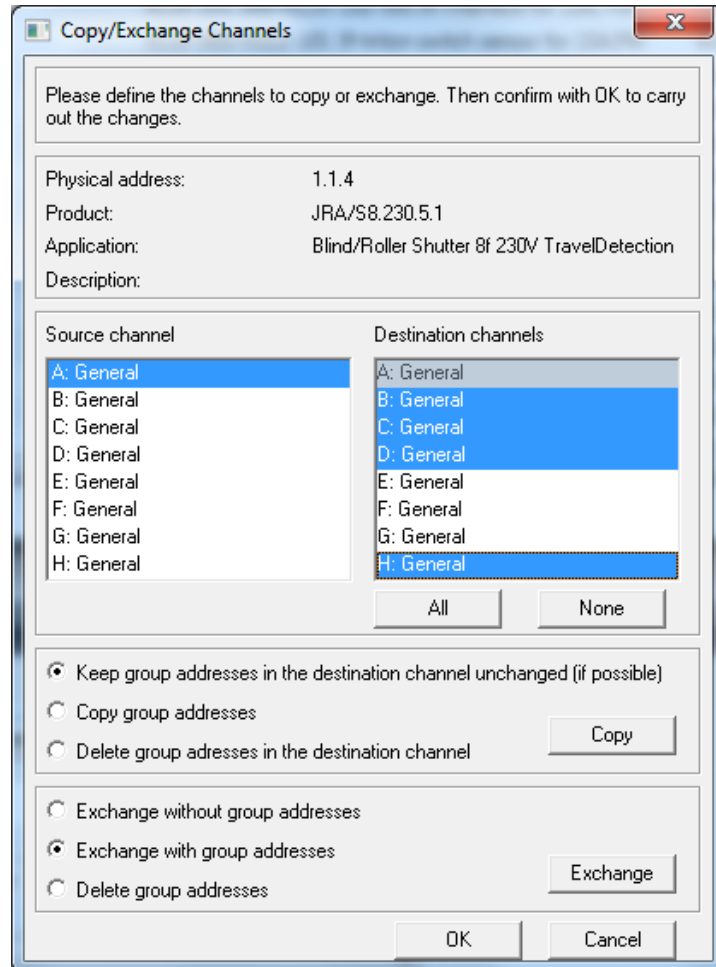
New software innovations

- For devices from ETS3 or higher, it is possible to assume the parameter settings and group addresses from earlier application program versions. Furthermore, conversion can be applied to transfer the existing parameterization of a device to another device.
- Example Conversion



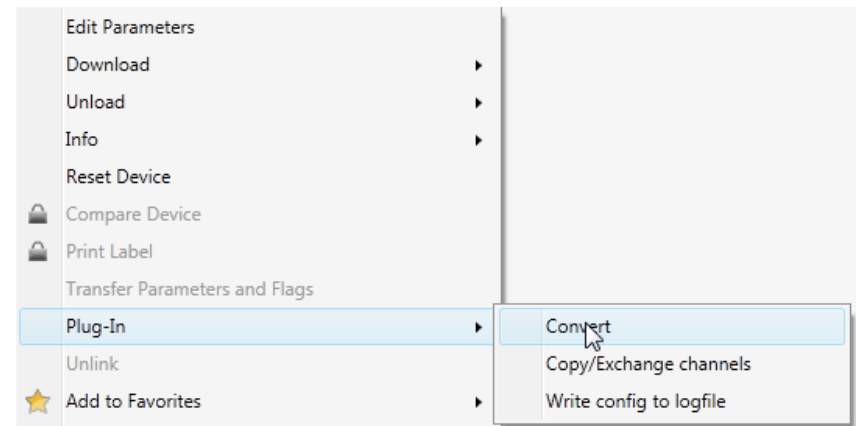
Blind/Roller Shutter Actuator JRA/S

New software innovations



Simplified commissioning: copy and exchange

- Copy one channel to one or more channels
- Exchange two channels
- Copy / exchange with or without group addresses

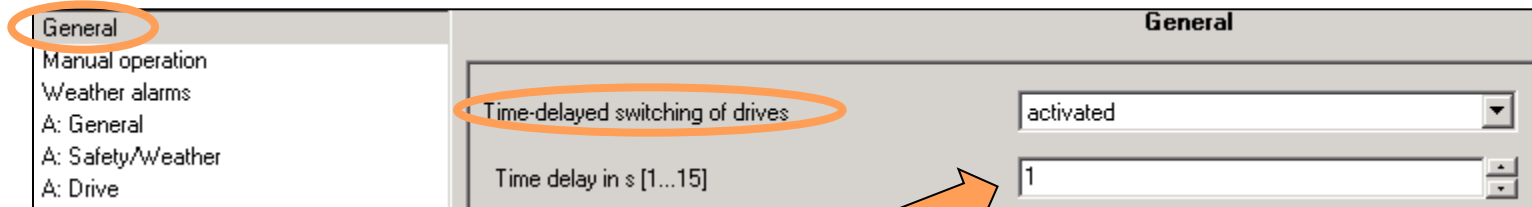


Blind/Roller Shutter Actuator JRA/S

New software innovations

Time-delayed switching of drives

- In large KNX systems, a large starting current peak is generated if all drives start simultaneously due to central telegrams
- The current peak can be limited by time delayed switching of the outputs
- The time delay applies for all outputs or connected drives of the actuator
- The central travel telegrams are executed with a delay
 - Move to height for sun 0..255, Adjust slat for sun 0..255
 - Block, Forced operation
 - Wind alarm, Rain alarm, Frost alarm
 - ...

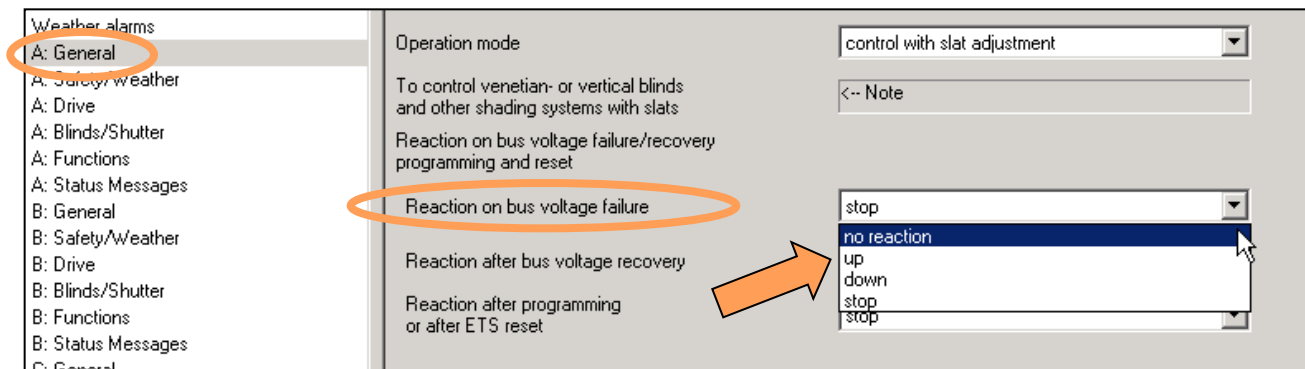


Blind/Roller Shutter Actuator JRA/S

New software innovations

Reaction on bus voltage failure (per output)

- no reaction
The output contacts remain in their current state
- up/down
The blind/shutter (s) move up or down
- Stop
If the blind/shutter is performing a movement, this movement stops immediately. If the blind/shutter is at rest, it will remain unchanged in its position



Blind/Roller Shutter Actuator JRA/S

New software innovations

Forced operation 1 bit or 2 bit

- With the function Forced operation, the blind/shutter can move via a 1 bit telegram to a determined position or it can move up or down via 2 bit telegrams and operation can be blocked
 - activated (1 bit)
 - Position height in % [0...100]
 - Position slat in % [0...100]
 - activated (2 bit)
 - The communication object Forced operation 2 bit is enabled

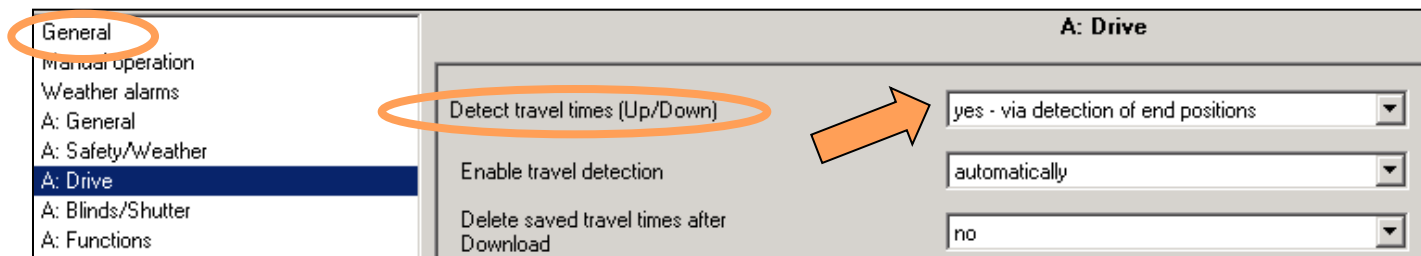
Parameter settings	Value
Output reacts on communication object for wind alarm no.	output does not react on wind alarm
Position on wind alarm	deactivated
Position on rain alarm	deactivated
Position for frost alarm	deactivated
Block	deactivated
Forced operation (1 bit/2 bit)	activated (1 bit)
Position height in % [0...100] (0% = top; 100% = bottom)	0
Position slat in % [0...100] (0% = open; 100% = closed)	0

Blind/Roller Shutter Actuator JRA/S

New software innovations

Detect travel times (only x.y.5.1)

- Determine the travel times via current detection
- The travel times are automatically and permanently determined during ongoing operation and/or via object "Trigger travel detection"
- Advantage
 - Compensation for changes in the length of the blind/shutter due to external influences (frost, UV rays or the use of heavier blind/shutter types)
 - Malfunction drive fault (no current flow or invalid travel times)



Blind/Roller Shutter Actuator JRA/S

New software innovations

Limit travelling range

- For certain applications, the travelling range of the blinds/shutters can be limited for the user
 - via object "Blinds/shutters up-down limited"
 - via object "Enable limitation"
- The limitation only acts with a telegram to the communication object Blinds/shutters up-down limited and a scene telegram

Weather alarms	Determine times for slat	via duration of slat adjustment (step)
A: General	Duration of slat adjustment (step) in ms [50...1,000]	200
A: Safety/Weather	Number of slat adjustments (from 0% = open to 100% = closed)	7
A: Drive	Position of slat after arriving on lower end position (100% = disabled)	100
A: Blinds/Shutter	Limit travelling range	via object "Enable limitation"
A: Functions	Upper limit in % [0...100] (0% = top; 100% = bottom)	0
A: Status Messages	Upper limit valid for automatic commands	no
B: General	Upper limit valid for direct commands	no
B: Safety/Weather	Lower limit in % [0...100] (0% = top; 100% = bottom)	100
B: Drive	Lower limit valid for automatic commands	no
B: Blinds/Shutter	Lower limit valid for direct commands	no
B: Functions		
B: Status Messages		
C: General		
C: Safety/Weather		
C: Drive		
C: Blinds/Shutter		
C: Functions		
C: Status Messages		
D: General		
D: Safety/Weather		
D: Drive		
D: Blinds/Shutter		

Blind/Roller Shutter Actuator JRA/S

New software innovations

Set dead times

- The sun protection system dead times of the blind/shutter mechanisms can occur individually. They can be caused by ageing of the blind/shutter, e.g. mechanical loading. It may occur that precision positioning of the blind/shutter may no longer be possible.
 - Dead time blinds/shutters from bottom until moving up
 - Dead time of slat from 100% closed until slat turn
 - Slippage of blinds/shutters on change of direction

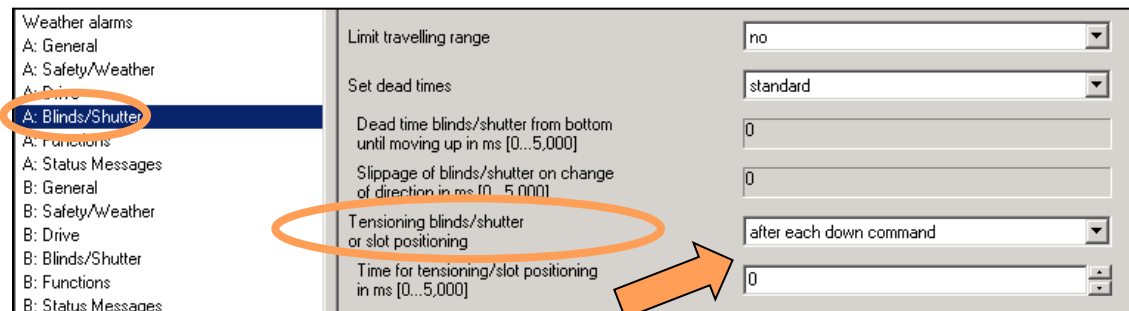
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A: General	Duration of slat adjustment (step) in ms [50...1,000]	200
A: Safety/Weather	Number of slat adjustments (from 0% = open to 100% = closed)	7
A: Drive	Position of slat after arriving on lower end position (100% = disabled)	100
A: Blinds/Shutter	Limit travelling range	no
A: Functions	Set dead times	user defined
A: Status Messages	Dead time blinds/shutter from bottom until moving up in ms [0...5,000]	0
B: General	Dead time of slat from 100% closed until slat turn in ms [0...5,000]	0
B: Safety/Weather	Slippage of slat on change of direction in ms [0...5,000]	0
B: Drive		
B: Blinds/Shutter		
B: Functions		
B: Status Messages		
C: General		
C: Safety/Weather		
C: Drive		
C: Blinds/Shutter		
C: Functions		
C: Status Messages		

Blind/Roller Shutter Actuator JRA/S

New software innovations

Tensioning blinds/shutters or slot positioning

- These parameters for slat adjustment are available exclusively in operation mode control without slat adjustment
- This function is used for tensioning or tightening textile blinds/shutters (e.g. the cloth of an awning with articulated arms) or for setting slot positioning (e.g. light or ventilation slots) on roller shutters
- In this way, the blind/shutter is stopped at the end of a DOWN motion and moved in the opposite direction for a parameterizable time
 - After each down command
 - Only after reaching lower end position

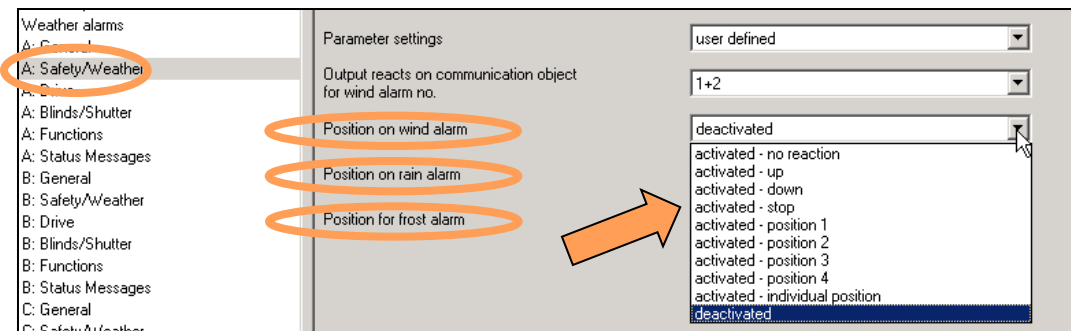


Blind/Roller Shutter Actuator JRA/S

New software innovations

Enhanced parameter for position on wind-, rain- and frost alarm

- No reaction: It will remain unchanged in its position
- Up: The blind/shutter moves UP after a weather alarm is received
- Down: The blind/shutter moves DOWN after a weather alarm is received
- Stop: If the blind/shutter is performing a movement, this movement stops immediately. If the blind/shutter is at rest, it will remain unchanged
- Position 1...4: If one of these positions is selected, the blind/shutter (s) move to a preset position
- Individual position: Movement to one of the individual positions is possible (position height in % [0...100] and position slat in % [0...100])
- deactivated: No reaction occurs in the event of a weather alarm



Blind/Roller Shutter Actuator JRA/S

New software innovations

Enhanced status messages

- Height and slat (0...255, two separate com. objects)
- Upper and lower end position (two separate com. objects)
- Operability (to indicate to the user via an LED that the blinds/shutters can not be moved at the current time e.g. weather alarm)
- Automatic Sun Protection
- Information (16 bit)
 - Drive fault (no current flow with controlled drive, only available on devices of type JRA/S x.y.5.1)
 - Wind alarm
 - Drive in motion
 - ...

The screenshot shows a configuration window for the ABB JRA/S actuator. On the left, a tree view lists various status messages, with 'A: Status Messages' highlighted. The main area displays four configuration options, each with a dropdown menu. An orange arrow points to the 'Status operability' dropdown, which is currently set to 'no'.

Configuration Item	Value
Enable communication object "Status height/slat 0...255" 1 byte	yes
Send object value	no, update only
Enable communication object "Status upper/lower end pos." 1 bit	no
Enable communication object "Status operability" 1 bit	no
Enable communication object "Status information" 16 bit	no

Blind/Roller Shutter Actuator JRA/S

New software innovations

8-bit scene

- Each blind/shutter output can be integrated in up to 18 scenes
- If a telegram is received on the communication object “Scene”, all outputs assigned to the sent scene number will then move to the saved scene position (call a scene), or the current position will be saved as a new scene position (store a scene)
 - Position height in % [0...100]
 - Position slat in % [0...100]

Weather alarms

A: General

A: Safety/Weather

A: Drive

A: Blinds/Shutter

A: Functions

A: Scene

A: Status messages

B: General

B: Safety/Weather

B: Drive

B: Blinds/Shutter

B: Functions

Overwrite scenes on download: no

Use 1st assignment: yes

Assignment to scene number 1...64: scene no. 3

Position height in % [0...100] (0% = top; 100% = bottom): 0

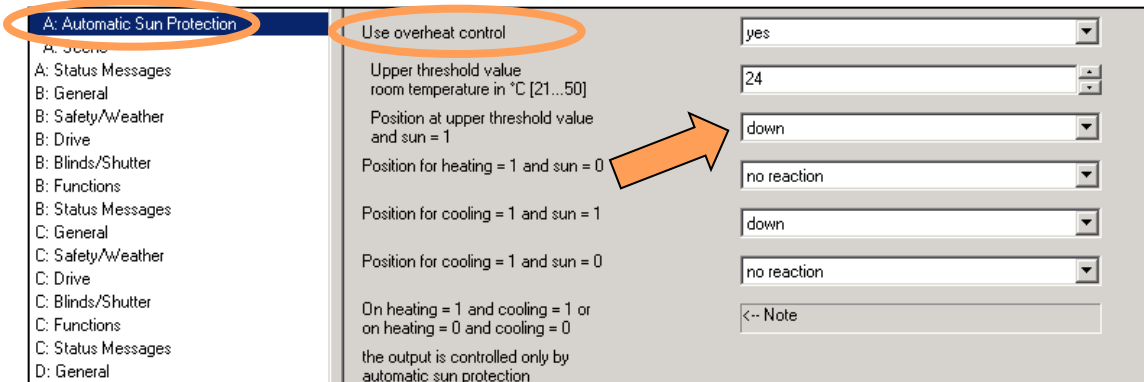
Position slat in % [0...100] (0% = open; 100% = closed): 0

Blind/Roller Shutter Actuator JRA/S

New software innovations

Enhanced automatic sun protection: Overheat control

- Heat up of the unoccupied room is avoided using overheat control
- If the temperature threshold here is reached or exceeded, the blinds/shutters will move to a parameterizable position, e.g. DOWN



The screenshot displays the configuration interface for the ABB JRA/S actuator. On the left, a tree view shows the navigation structure, with 'A: Automatic Sun Protection' selected and highlighted by an orange circle. The main panel on the right contains the following settings:

- Use overheat control:** A dropdown menu set to 'yes', highlighted by an orange circle.
- Upper threshold value room temperature in °C [21...50]:** A numeric input field set to '24'.
- Position at upper threshold value and sun = 1:** A dropdown menu set to 'down', indicated by an orange arrow.
- Position for heating = 1 and sun = 0:** A dropdown menu set to 'no reaction'.
- Position for cooling = 1 and sun = 1:** A dropdown menu set to 'down'.
- Position for cooling = 1 and sun = 0:** A dropdown menu set to 'no reaction'.
- On heating = 1 and cooling = 1 or on heating = 0 and cooling = 0:** A text field containing '<-- Note'.

At the bottom of the main panel, a note states: 'the output is controlled only by automatic sun protection'.

Blind/Roller Shutter Actuator JRA/S

i-bus® Tool

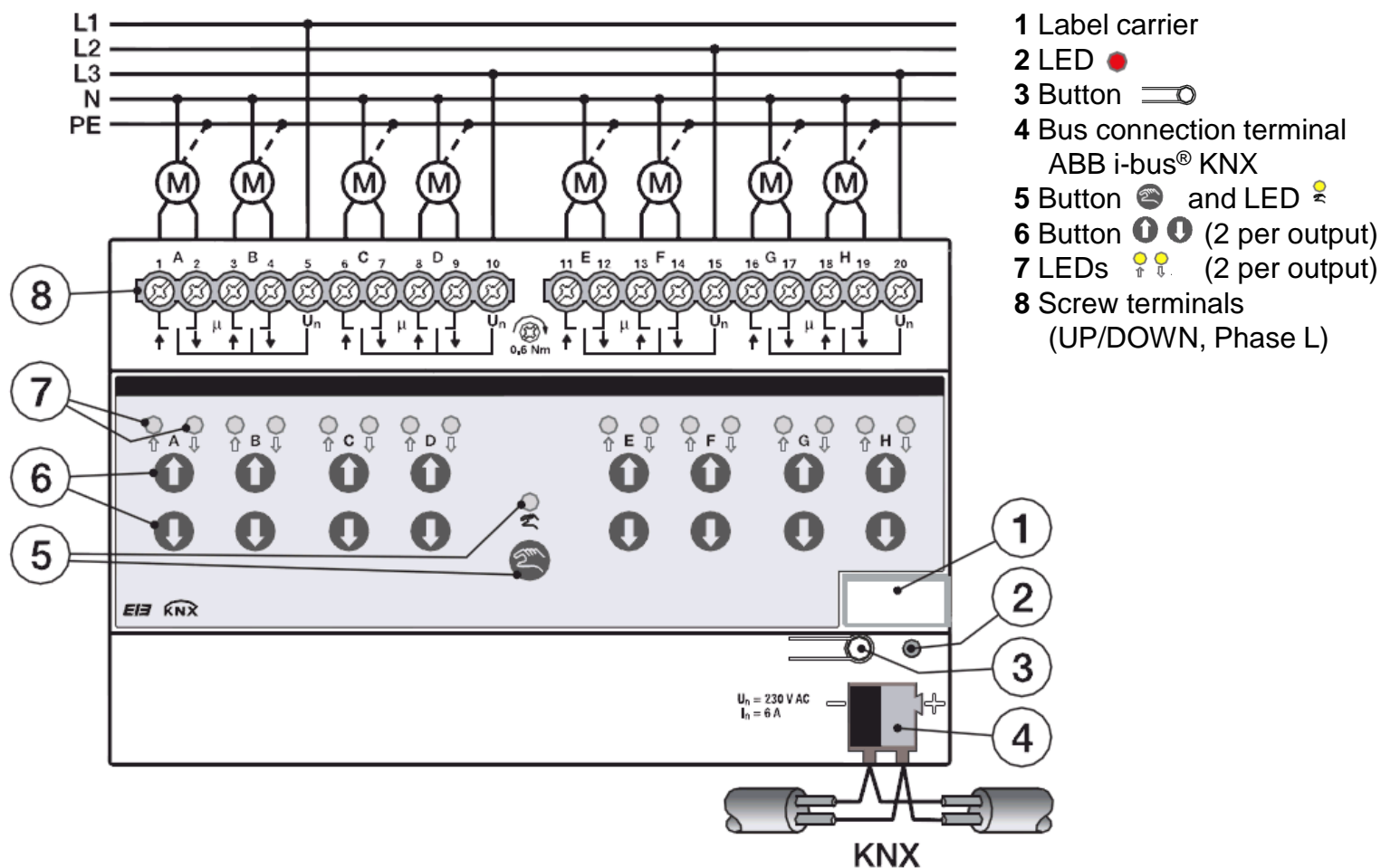
A status of output	Weather / safety alarms	Positions 1-4 / Scene
Operating mode: <input type="text" value="Control with slat adjustment (Blinds)"/>	Wind alarm No.1	<input type="button" value="Move to position 1"/> <input type="button" value="Set current position as position 1"/>
Weather/safety alarm	Wind alarm No.2	<input type="button" value="Move to position 2"/> <input type="button" value="Set current position as position 2"/>
Status manual operation	Wind alarm No.3	<input type="button" value="Move to position 3"/> <input type="button" value="Set current position as position 3"/>
Automatic sun protection	Rain alarm	<input type="button" value="Move to position 4"/> <input type="button" value="Set current position as position 4"/>
Heating/cooling automatic	Frost alarm	<input type="button" value="Recall scene no."/> <input type="text" value="1"/>
Motor In Motion	Forced operation <input type="button" value="Deactivate"/>	<input type="button" value="Store current position as scene no."/> <input type="text" value="1"/>
Motor error	Block <input type="button" value="Deactivate"/>	

Position / Control Hanging	Automatic Control
<div> 13% Current Position 0.4% (1) Position Valid <input type="button" value="Move To Position"/></div> <div> <input type="button" value="Trigger reference movement/travel detection"/></div> <div> 42% Current Slat 0.4% (1) Slat Valid <input type="button" value="Move To Position"/></div>	Activate automatic control <input type="button" value="Deactivate"/>
	Direct control blocked
	Automatic control disabled
	Sun <input type="button" value="Deactivate"/>
	Current position height for sun <input type="text" value="1"/>
	Position height for sun <input type="text"/> <input type="button" value="Write"/>
	Current position slat for sun <input type="text" value="1"/>
	Position slat for sun <input type="text"/> <input type="button" value="Write"/>
	Presence <input type="button" value="Deactivate"/>
	Heating <input type="button" value="Deactivate"/>
	Cooling <input type="button" value="Deactivate"/>
	Current room temperature <input type="text" value="1"/>
	Room temperature <input type="text"/> <input type="button" value="Write"/>

General weather alarms for all channels	
Wind alarm No.1	<input type="button" value="Deactivate"/>
Wind alarm No.2	<input type="button" value="Deactivate"/>
Wind alarm No.3	<input type="button" value="Deactivate"/>
Rain alarm	<input type="button" value="Deactivate"/>
Frost alarm	<input type="button" value="Deactivate"/>

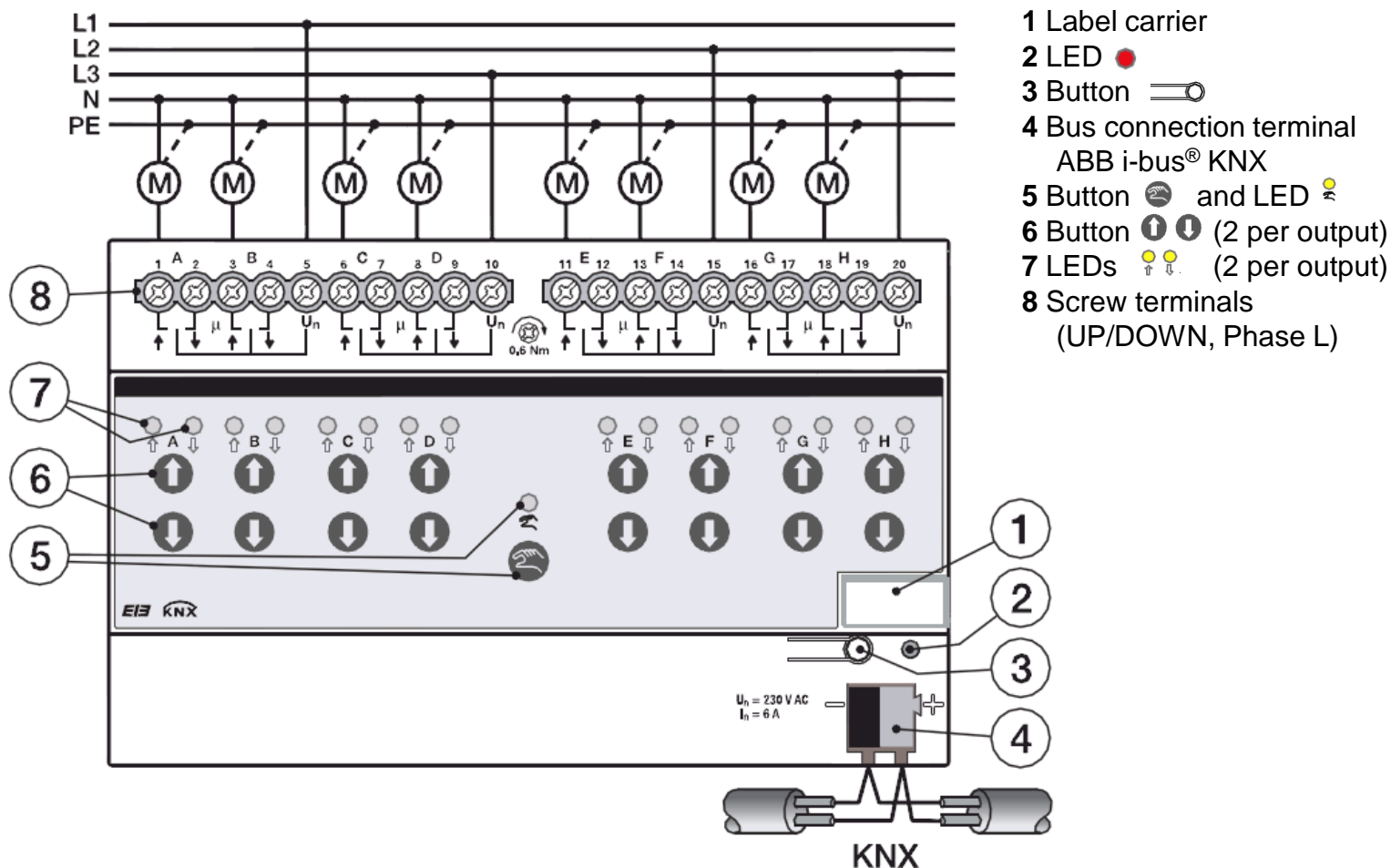
Blind/Roller Shutter Actuator JRA/S X.230.5.1

Connection to the blind and roller shutter drives



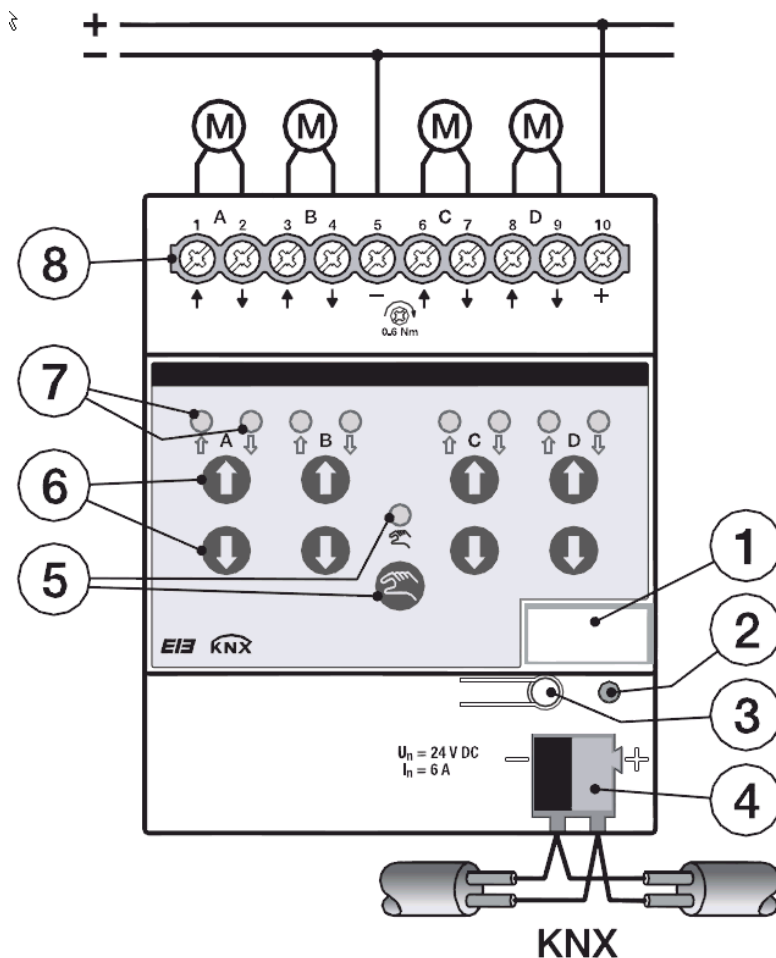
Blind/Roller Shutter Actuator JRA/S X.230.5.1









Connection to ventilation flaps



Blind/Roller Shutter Actuator JRA/S 4.24.5.1

Connection to 24V-DC drives






- 1 Label carrier
- 2 LED 
- 3 Button 
- 4 Bus connection terminal
ABB i-bus® KNX
- 5 Button  and LED 
- 6 Button   (2 per output)
- 7 LEDs   (2 per output)
- 8 Screw terminals
(UP/DOWN, Phase L)

Blind/Roller Shutter Actuator JRA/S

Operating controls







Push buttons are located on the front of the device for manual operation

- Button  „Manual operation“
 - Switch to „Manual operation“ and „KNX mode“
- Button   „Output A...X UP/DOWN“
 - KNX mode: No reaction
 - Manual operation:
 - Long operation: UP/DOWN or opening/closing of the contact
 - Short operation: Slat adjustment /STOP

Blind/Roller Shutter Actuator JRA/S

Manual operation








Function

- As standard button “manual operation” is enabled and switch on and off is possible using it
- Switch on of manual operation:
 - Press  button until the yellow LED  lights continuously
- Switch off of manual operation:
 - Press  button until the yellow LED  switches off
- The yellow LED  flashes during the switchover process
- After connection to the KNX, an ETS download or ETS reset the device is in KNX operation
- The LED  is off
- All LEDs indicate their current state

Blind/Roller Shutter Actuator JRA/S

Display elements

Indicator LEDs are located on the front of the device

- LED  „Manual operation“
 - Off: The device is in KNX mode
 - On: The device is in manual mode
- LED  A  „Output A...X UP/DOW “
 - On  : Upper limit position
 - On  : Lower limit position
 - Both LED On: Safety function active, e.g. wind alarm
 - Flashes  : Blind/shutter moving upwards
 - Flashes  : Blind/shutter moving downwards
 - Both LEDs flash alternately (only JRA/S x.y.5.1):
Malfunction drive fault (no current flow or invalid travel times)
 - Off: Intermediate position

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